Stat 400, Chapter 3.1-3.6 Summary ~ things you should know

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Chapter 3.1-3.6 - Important concepts:

random variables

probability distribution tables, line graphs and histograms

probability distribution functions

discrete vs. continuous random variables

cumulative distribution functions

expected value, variance and standard deviation

probability distributions for discrete random variables:

- binomial probability distribution
- hypergeometric probability distribution
- negative binomial probability distribution
- Poisson probability distribution
- geometric probability distribution

linear transformations of discrete random variables

Be able to:

given a scenario, construct a probability distribution table, line graph or histogram

given a scenario, determine the probability distribution function

given a scenario, determine the cumulative distribution function

calculate expected value, variance and standard deviation for a discrete random variable

for each of the six probability distributions above,

- calculate probabilities
- calculate expected value, variance and standard deviation

given a linear transformation Y of a discrete random variable X,

- construct a probability distribution
- calculate expected value, variance and standard deviation of Y